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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/519,143	09/22/2005	John Harold Flexman	WRA0010-US	3193
28970	7590	10/02/2006	EXAMINER	
PILLSBURY WINTHROP SHAW PITTMAN LLP			FETZNER, TIFFANY A	
1650 TYSONS BOULEVARD			ART UNIT	
MCLEAN, VA 22102			PAPER NUMBER	
			2859	

DATE MAILED: 10/02/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/519,143	FLEXMAN ET AL.	
	Examiner	Art Unit	
	Tiffany A. Fetzner	2859	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 December 2004.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-14 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 27 December 2004 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>02/03/2006</u> | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Priority

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Information Disclosure Statement

2. The information disclosure statement (IDS) submitted on February 3rd 2006 is in compliance with the provisions of 37 CFR 1.97. Accordingly, the examiner has considered the information disclosure statement. The initialed and dated IDS statement is attached to this Office Action.

Drawings

3. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference character(s) not mentioned in the description:

A) figure 2 shows a **component 25**, which is not mentioned, in applicant's original disclosure in the context of figure 2. [See page 5 line 25 through page 6 line 14.].

B) figure 2 shows a **component 30**, which is not mentioned, in applicant's original disclosure in the context of figure 2. [See page 5 line 25 through page 6 line 14.].

Corrected drawing sheets in compliance with 37 CFR 1.121(d), or amendment to the specification to add the reference character(s) in the description in compliance with 37 CFR 1.121(b) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement-drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the examiner does not accept the changes, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

4. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the limitations of

claims 7 through 14 must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Possible corrections include

- A)** For **claims 7-11**, a key for each figure listing the potential coating types, of the contact members, which are taught in the specification.
- B)** For **claim 12** a correction to one of the figures or an additional feature showing the ESR switch inside the mercury containment vessel.
- C)** For **claim 13** a correction to one or more of the figures indicating that the entire ESR switch structure is contained in a **shown vacuum vessel**.
- D)** Adding an additional flow-chart figure, in order to show the method steps of **claim 14**. The examiner notes that any newly added figure must also be listed in the brief description of the drawings and described in the specification. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement-drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the examiner does not accept the changes, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

5. The disclosure is objected to because of the following informalities:

- A)** The specification fails to describe components 25, and 30 of figure 2, [See page 5 line 25 through page 6 line 14]. Appropriate correction is required.

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

7. Component **Claims 1-3** and corresponding **method claim 14** are rejected under **35 U.S.C. 102(b)** as being anticipated by **Kim et al.**, US patent 6,291,994 B1 issued September 18th 2001.

8. With respect to **Claim 1**, **Kim et al.**, teaches and shows, "In a coil-capacitor circuit of a nuclear or electron resonance system", [See figure 1, col. 1 lines 10-16, col. 14 line 6 through col. 20 line 3, and col. 13 lines 17-20] "a low equivalent series resistant switch" [See the ESR switch taught from col. 14 line 6 through col. 18 line 4] "selectively added thereto" [See col. 7 lines 50-60; col. 8 lines 7-35; col. 19 line 54 through col. 20 line 3; the abstract, col. 4 lines 31-33; and col. 5 lines 54-58.], "the switch comprising a pair of physically and electrically contacting members" (i.e. the terminals of each of the contact points that the MOSFET switch of figure 1 connect to.), "having mutually large contact surface areas", (i.e. see figure one where each contact point is located at the end of a surface of extended electrical component length in the form of a connecting wire.) "said members" (i.e. the terminals of each of the contact points that the MOSFET switch of figure 1 connect to), "being movable" (i.e. via the rotating switch of figure 1) "between a quiescent position" (i.e. an off or inactive position) "where the contact surface areas are separated by a small distance" [See the gap when the auto-tune relay switches and capacitors are in the "open" switch position], "and an active position" [See figure 1 where the switches are in contact with the terminal end of the relay and the capacitor] "where the contact surface areas" (i.e. the electrical contact points of the MOSFET semi-conductor switches of figure 1) "are brought into physical and electrical contact to connect into the coil-capacitor circuit." [See the examples of the two active, "closed", "in contact" auto tune and relay capacitors shown in figure 1.]

9. With respect to **Claim 2**, and its corresponding method **claim 14**, **Kim et al.**, teaches and shows, "A low equivalent series resistance (ESR) switch" [See component 10 and its associated components of figure 1, See also the ESR switch taught from col. 14 line 6 through col. 18 line 4] "for selectively adding" [See col. 7 lines 50-60; col. 8 lines 7-35; col. 19 line 54 through col. 20 line 3; the abstract, col. 4 lines 31-33; and col. 5 lines 54-58.], "to a coil-capacitor circuit of a nuclear or electron resonance system" [See figure 1, col. 1 lines 10-16, col. 14 line 6 through col. 20 line 3, and col. 13 lines 17-20], "the switch comprising a pair of physically and electrically contacting members" (i.e. the terminals of each of the contact points that the MOSFET switch of figure 1 connect to.), "having mutually large contact surface areas", (i.e. see figure one where each contact point is located at the end of a surface of extended electrical component length in the form of a connecting wire.) "said members" (i.e. the terminals of each of the contact points that the MOSFET switch of figure 1 connect to), "being movable" (i.e. via the rotating switch of figure 1) "between a quiescent position" (i.e. an off or inactive position) "where the contact surface areas are separated by a small distance" [See the gap when the auto-tune relay switches and capacitors are in the "open" switch position], "and an active position" [See figure 1 where the switches are in contact with the terminal end of the relay and the capacitor] "where the contact surface areas" (i.e. the electrical contact points of the MOSFET semi-conductor switches of figure 1) "are brought into physical and electrical contact to connect into the coil-capacitor circuit." [See the examples of the two active, "closed", "in contact" auto tune and relay capacitors shown in figure 1.]

10. With respect to **Claim 3**, **Kim et al.**, teaches and shows, an "actuating means" (i.e. the stepper motor of col. 12 line 54 through col. 13 line 3) "to move said contacting members" (i.e. via the switch component of the MOSFET switches of figure 1, col. 15 line 1, and col. 17 lines 8-53) between said quiescent position" (i.e. an off or inactive position) "and said active position" (i.e. the connecting closed position). ." [See the examples of the two active, "closed", "in contact" auto tune and relay capacitors shown in figure 1, as well as the "open" switch of figure 1 component 10 in the auto tune and

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relay capacitors section.] The same reasons for rejection, which apply to **claim 1** also apply to **claim 3** and need not be reiterated.

Claim Rejections - 35 USC § 103

11. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

12. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

13. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

14. **Claims 7-11** are rejected under **35 U.S.C. 103(a)** as being unpatentable over **Kim et al.**, US patent 6,291,994 B1 issued September 18th 2001; as applied to **claims 1-3 and 14** above, and further in view of **Pitzen et al.**, US patent 5,792,572 issued August 11th 1998, with respect to the conventional type of materials from which electrical contact members are constructed, and the reasons behind the specific

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selection of these materials for the manufacturing of those contact members, which are well known, and well established features.

15. With respect to **Claim 7, Kim et al.**, lacks directly teaching that "said contacting members are coated with a metal to prevent corrosion and carbonization of the surface thereof". However, **Pitzen et al.**, teaches this limitation with respect to electrical contact members. [See **Pitzen et al.**, col. 7 lines 45-55; col. 10 lines 3-11.] It would have been obvious to one of ordinary skill in the art at the time that the invention was made to modify the teaching of **Kim et al.**, with the teaching of **Pitzen et al.**, because the use of a coating on an electrical contacting component to prevent corrosion and carbonization of the surface thereof, is well known, since electrical circuits are not always easy or cheap to manufacture or "re-manufacture", in case the component breaks or burns out, therefore the use of measures to protect the contacts from becoming damaged or destroyed in common place in the electrical arts. The same reasons for rejection, and obviousness that apply to **claims 1, 2, 3, and 14** also apply to **claim 7** and need not be reiterated.

16. With respect to **Claims 8 through 11, Kim et al.**, lacks directly teaching that "said contacting members are made or coated with": "copper" (i.e. **claim 8**); "gold" (i.e. **claim 9**) "rhodium"; (i.e. **claim 10**) "silver"; (i.e. **claim 11**): However, **Pitzen et al.**, teaches these plating materials for electrical contact members. [See **Pitzen et al.**, col. 7 lines 45-55; col. 9 line 57 through col. 10 line 11; col. 11 lines 20-24.] It would have been obvious to one of ordinary skill in the art at the time that the invention was made to modify the teaching of **Kim et al.**, with the teaching of **Pitzen et al.**, because the use of specific types of coatings and platings of electrical contact members including the applicant's listing of coatings comprising "copper" (i.e. **claim 8**); "gold" (i.e. **claim 9**) "rhodium"; (i.e. **claim 10**) "silver"; (i.e. **claim 11**) are all well known and well-established electrical contact coatings that are conventionally used to prevent corrosion and carbonization of the contact members.] The same reasons for rejection, and obviousness that apply to **claims 1, 2, 3, and 14** also apply to **claims 8 through 11** and need not be reiterated.

Allowable Subject Matter

17. **Claims 4-6 and 12-13** are objected to as being dependent upon a rejected base claim, but would be allowable, pending an updated prior art search based upon the applicant's next response if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Specifically, the **prior art of record does not teach or show:**

A) With respect to (**Claim 4**), that "said contacting members comprise a pair of parallel bars and said ESR switch includes a plurality of insulated guide rods to guide said parallel bars in and between said quiescent position and said active position", as illustrated by applicant's **figure 2**.

B) With respect to (**Claim 5**), that "said contacting members comprise an oval cross-section shaped rod disposed between two concave parallel bars, said oval cross-section shaped rod being rotatable to said active position to physically and electrically connect with said concave parallel bars and further rotatable to said quiescent position to physically and electrically disconnect from said concave parallel bars", as illustrated by applicant's **figure 3**.

C) With respect to (**Claim 6**), that "said contacting members comprise an elongated multi-pole switch having a pair of radially disposed and transversely spaced lugs and a pair of radial, externally mounted concave contacts, the lugs being rotatable relative to the contacts, whereby rotation of the switch to different angular positions allows different pairs of lugs to make physical and electrical contact with said contacts in discrete active positions, and also to disconnect the physical and electrical contact between said lugs and said contacts in discrete quiescent positions", as illustrated by applicant's **figure 4**.

D) With respect to **Claim 12**, that "said contacting members are made or coated with **mercury** and are contained within a vessel which prevents the escape of the **mercury**". However, the examiner notes that none of applicant's figures show this limitation as claimed. Therefore a correction to the drawings is required.

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E) With respect to **Claim 13**, that "the **entire low ESR switch** as claimed in **claim 1**, is **contained within a vacuum vessel**." However, the examiner notes that none of applicant's figures show this limitation as claimed. Therefore a correction to the drawings is required.

Conclusion

18. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tiffany Fetzner whose telephone number is: (571) 272-2241. The examiner can normally be reached on Monday-Thursday from 7:00am to 4:30pm., and on alternate Friday's from 7:00am to 3:30pm.

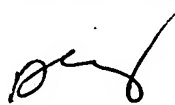
19. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Diego Gutierrez, can be reached at (571) 272-2245. The **only official fax phone number** for the organization where this application or proceeding is assigned is **(571) 273-8300**.

20. Information regarding the status of an application may be obtained from the Patent Application information Retrieval (PAIR) system Status information for published applications may be obtained from either Private PMR or Public PMR. Status information for unpublished applications is available through Private PMR only. For more information about the PMR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PMR system contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



TAF

September 26, 2006



Diego Gutierrez
Supervisory Patent Examiner
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